

# Jihoon Min

Transformative Institutional and Social Solutions Research Group  
Sustainable Service Systems Research Group  
Energy, Climate, and Environment Program  
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## AREAS OF INTEREST

Energy and Development, Energy Inequality, Energy and Human Wellbeing, Energy Demand and Efficiency, Consumer Choice and Behavior

## PROFESSIONAL APPOINTMENTS

- 2015 – present      Research Scholar, IIASA, Laxenburg, Austria  
                            Transformative Institutional and Social Solutions (TISS) Group  
                            Sustainable Service Systems (S3) Group  
                            Energy, Climate, and Environment (ECE) Program
- 2014 – 2015        Postdoctoral Fellow, Department of Engineering and Public Policy,  
                            Carnegie Mellon University, Pittsburgh PA, US
- 2008 – 2010        Senior Demand Side Analyst, Efficiency 2.0 LLC, New York, NY, US
- 2001 – 2005        Senior Engineer, LG Electronics, Inc., Seoul, Korea

## EDUCATION

- 2014      Ph.D. in Engineering and Public Policy, Department of Engineering and Public Policy, Carnegie Mellon University  
            - Thesis: “Energy Efficient Lighting: Consumer Preferences, Choices, and System Wide Effects”  
            - Concentration: Energy economics; Consumer behavior; Energy efficiency policy
- 2008      Master of Environmental Science, Yale School of Forestry and Environmental Studies (F&ES), Yale University
- 2001      Master of Science in Electrical Engineering, Department of Electrical Engineering, Seoul National University
- 1999      Bachelor of Science in Electrical Engineering, Department of Electrical Engineering, Seoul National University  
            - Graduated cum laude
- 2006      Attended Master of Arts program in Economics, Korea University Graduate School of Economics

**PUBLICATIONS****Refereed Journal Articles** (ORCID: [0000-0002-0020-1174](https://orcid.org/0000-0002-0020-1174))

- 2021 Rao, N., Kiesewetter, G., **Min, J.**, Pachauri, S., & Wagner, F., Household contributions to and impacts from air pollution in India. *Nature Sustainability*. (forthcoming)
- 2021 Vita, G., Rao, N., Usubiaga-Liaño, A., **Min, J.**, & Wood, R., Durable Goods Drive Two-Thirds of Global Households' Final Energy Footprints. *Environmental Science & Technology* 55 (5), 3175-3187. [doi](#)
- 2020 Mastrucci, A., **Min, J.**, Usubiaga-Liaño, A., Rao, N.D., A Framework for Modelling Consumption-Based Energy Demand and Emission Pathways. *Environmental Science & Technology*. [doi](#)
- 2019 Rao, N.D., **Min, J.**, Mastrucci, A., Energy requirements for decent living in India, Brazil and South Africa. *Nature Energy* 4, 1025–1032. [doi](#)
- 2019 Helveston, J.P., Seki, S.M., **Min, J.**, Fairman, E., Boni, A.A., Michalek, J.J., Azevedo, I.M.L., Choice at the pump: measuring preferences for lower-carbon combustion fuels. *Environ. Res. Lett.* 14, 084035. [doi](#)
- 2018 Rao, N.D., **Min, J.**, Less Global Inequality Can Improve Climate Outcomes. *Wiley Interdisciplinary Reviews: Climate Change* 9, e513. [doi](#)
- 2018 Rao, N.D., **Min, J.**, DeFries, R., Ghosh-Jerath, S., Valin, H., Fanzo, J., Healthy, Affordable and Climate-Friendly Diets in India. *Global Environmental Change* 49, 154–165. [doi](#)
- 2018 Rao, N.D., **Min, J.**, Decent Living Standards: Material Prerequisites for Human Wellbeing. *Social Indicator Research* 138, 225–244. [doi](#)
- 2017 **Min, J.**, Rao, N.D., Estimating Uncertainty in Household Energy Footprints. *Journal of Industrial Ecology*. [doi](#)
- 2015 **Min, J.**, Azevedo, I.L., Hakkarainen, P., Assessing Regional Differences in Lighting Heat Replacement Effects in Residential Buildings across the United States. *Applied Energy* 141, 12–18. [doi](#)
- 2014 **Min, J.**, Azevedo, I.L., Michalek, J., de Bruin, W.B., Labeling Energy Cost on Light Bulbs Lowers Implicit Discount Rates. *Ecological Economics* 97, 42–50. [doi](#)
- 2010 **Min, J.**, Hausfather, Z., Lin, Q.F., A High-Resolution Statistical Model of Residential Energy End Use Characteristics for the United States. *Journal of Industrial Ecology* 14, 791–807. [doi](#)

**Conference Proceedings**

- 2014 **Min, J.**, Azevedo, I.L., Michalek, J., Analysis of Consumer Preferences for Residential Lighting through Consumer Panel Data. *Proceedings of the 8th International Conference on Energy Efficiency in Domestic Appliances and Lighting*, 1197–1214. [doi](#)

**Book Chapter**

- 2018 Rao, N.D., Mastrucci, A., **Min, J.**, Applying LCA to estimate development energy needs: The cases of India and Brazil, in: Benetto, E., Gericke, K., Gupton, M. (Eds.),

Designing Sustainable Technologies, Products and Policies: From Science to Innovation. Springer International Publishing. [doi](#)

### Reports and others

- 2021 Bertram C., Hilaire J, Kriegler E, Beck T, Bresch D, Clarke L, Cui R, Edmonds J, Charles M, Zhao A, **Min J**, Piontek F, Rogelj J, Schleussner CF, Sferra, F, van Ruijven B, Yu S, Holland D, Liadze I, Hurst I: NGFS Climate Scenario Database: [Technical Documentation V2.1](#)
- 2021 van Ruijven B and **Min J**, [NGFS Scenario Explorer](#)
- 2020 NGFS Climate Scenarios for central banks and supervisors. [link](#)

### In Progress

- Global energy requirement for decent life for all in the climate-constrained world (under review, Environmental Research Letters)
- Growth and inequality trade-offs with minimum income
- Endogenizing key material industry sectors in integrated assessment model (MESSAGEix)

### AWARDS AND HONORS

- 2014 2<sup>nd</sup> Place, Student Paper Competition at the International Symposium on Sustainable Systems and Technology (ISSST), Oakland, CA, USA
- 2001 Distinguished Master's Thesis Award, Seoul National University

### GRANTS AND FELLOWSHIPS

- 2011 Small Grants Program in Behavioral Economics, the Russell Sage Foundation, NY, USA
- 2010 Graduate Research Assistantship, the Center for Climate and Energy Decision Making (CEDM), Carnegie Mellon University
- 2006 Brain Korea 21 Research Fellowship; Government Funded, Korea University

### INVITED TALKS

- 2017 Korean Energy Economics Institute (KEEI), Ulsan, Korea, January
- 2016 Korean Scientists and Engineers Association in Austria (KOSEAA), Wien, Austria, October
- 2014 Department of Technology and Society, Stony Brook University, NY, December
- 2014 Graduate School of Science and Technology Policy (STP) & Graduate School of Green Growth, Korea Advanced Institute of Science and Technology (KAIST), Seoul, Korea, May

- 2014 State University of New York (SUNY) College of Environmental Science and Forestry (ESF), Syracuse, NY, April
- 2009 Potsdam Institute for Climate Impact Research (PIK), Potsdam, Germany, June

### CONFERENCE ACTIVITIES

- 2021 Present “*Growth and inequality trade-offs to achieve minimum income*”, Ninth Meeting of the Society for the Study of Economic Inequality (ECINEQ), LSE London, July
- 2016 Presented “*Estimating Uncertainty in Household Energy Footprints*”, 24th International Input-Output Conference, Seoul, Korea, July
- 2015 Presented “*Understanding Trends in Efficient Lighting Adoption across the United States*”, 8th International Conference on Energy Efficiency in Domestic Appliances and Lighting (EEDAL), Lucerne-Horw, Switzerland, August
- 2014 Presented “*Assessing Regional Differences in Lighting Heat Replacement Effects in Residential Buildings across the United States*”, International Society of Industrial Ecology (ISIE) Conference 2015, University of Surrey, Guilford, UK, July
- 2014 Presented “*Assessing Regional Differences in Lighting Heat Replacement Effects in Residential Buildings across the United States*”, International Symposium on Sustainable Systems and Technology (ISSST). Oakland, CA, USA, May
- 2013 Presented “*Analysis of Heat Replacement Effect in the U.S. Residential Buildings*”, 13th European IAEE Conference, Dusseldorf, Germany, August
- 2012 Presented “*Labeling Energy Cost on Light Bulbs Lowers Implicit Discount Rates*”, 31st USAEE/IAEE North American Conference, Austin, TX, USA, November
- 2012 Presented “*Labeling Energy Cost on Light Bulbs Lowers Implicit Discount Rates*”, Industry Studies Conference, Pittsburgh, PA, USA, May

### SELECTED PROFESSIONAL AND REVIEW ACTIVITIES

- 2021 Guest Editor, Sustainability Special Issue on household energy, MDPI
- 2021 – present Editorial Board Member, Journal of Climate Change Research
- 2017 – present Head of the Energy and Environment Section, Korean Scientists and Engineers Association in Austria (KOSEAA), Austria
- Peer Reviews for Nature Sustainability, Global Environmental Change, Environmental Research Letters, Climatic Change, Energy Economics, Journal of Industrial Ecology, Sustainability, Energies, Journal of Environmental Management, Journal of Economic Structures, and GAIA - Ecological Perspectives for Science and Society

### INSTITUTIONAL SERVICE

- 2018 Co-chair, Committee on Cultural Diversity and Building a Positive Work Environment, IIASA
- 2017 Liaison for Diversity Committee, Staff Association Committee, IIASA

**POLICY ENGAGEMENT AND OUTREACH**

- 2007 Student Consultant, Natural Resources Defense Council (NRDC), Moscow, Russia
- 2007 Yale delegation to the UNFCCC COP13 at Bali, Indonesia

**MEDIA COVERAGE**

- 2018 [Coarse Grains Better Than Rice for Health, Environment](#), SciDev.Net
- 2018 [Shift to Coarse Grains from Rice for Healthy, Environment-Friendly Diet: Study](#), Mongabay India
- 2018 [Is There a Conflict between Reducing Global Income Inequality and Combating Climate Change?](#), Advanced Science News
- 2014 [Shedding Light on True Cost of Bulbs](#), Pittsburgh Post-Gazette
- 2014 [Discounting Energy Savings: Lessons from Incandescent Light Bulbs](#), Chicago Policy Review

**OTHER RESEARCH EXPERIENCES**

- 2008 – 2009 Research Assistant w/ Prof. Robert Mendelsohn, Yale University
- 2007 Climate Policy Research Intern, UNEP Risø Center, Roskilde, Denmark

**RELATED PROFESSIONAL SKILLS**

R, Python, GAMS, Matlab, Stata, SQL, ArcGIS, SAS, EnergyPlus, C/C++, Ruby

**PROFESSIONAL MEMBERSHIPS/AFFILIATIONS**

International Society of Industrial Ecology  
International Input-Output Association  
International Association for Energy Economics